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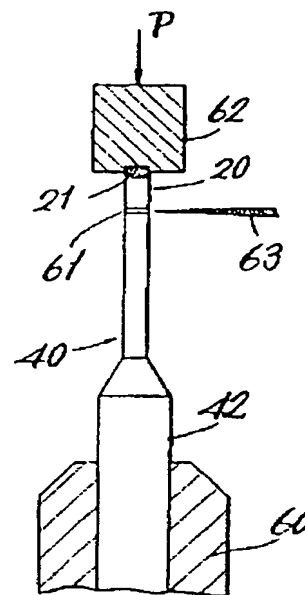
APPLICANT : NIPPON PUROBIIMU KOGYO KK;

INVENTOR : OUCHI AKIHIRO;

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TITLE : MANUFACTURE OF SMALL DIAMETER
DRILL

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ABSTRACT : PURPOSE: To reduce a manufacturing cost by performing the electron beam welding of the PCD chip in the prescribed length consisting of a diamond sintered body and sintered hard alloy to the super alloy member of a drill body with Ni as a filler material.

CONSTITUTION: The PCD chip 20 in ≤ 3 mm length which is arranged at the drill tip part and which is composed of a diamond sintered body and sintered hard alloy member is prepared in advance. The PCD chip 20 is first placed by pinching the Ni plate 61 of a filler material by holding the sintered hard member 40 of the drill with a shank part 42 to a chuck 60. The PCD chip 20 and sintered hard member 40 are located concentrically by a copper made jig 62 to apply a light pressure P. This composition is worked in a small diameter drill after welding by irradiating an electron beam 63 on a junction part 61 by arranging it in the vacuum of the electron beam welding equipment. In this way the manufacture of the small diameter PCD drill is simplified and the manufacturing cost can be reduced.

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